

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
24 June 2004 (24.06.2004)

PCT

(10) International Publication Number
WO 2004/053113 A1

(51) International Patent Classification:
A61K 39/395

C12N 5/08,

(74) Agents: HUGHES, E, John, L et al.; 1 Nicholson Street,
Melbourne, Victoria 3000 (AU).

(21) International Application Number:

PCT/AU2003/001647

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(22) International Filing Date: 9 December 2003 (09.12.2003)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

2002953238

9 December 2002 (09.12.2002)

AU

(84) Designated States (*regional*): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(71) Applicant (*for all designated States except US*): **THE CORPORATION OF THE TRUSTEES OF THE ORDER OF THE SISTERS OF MERCY IN QUEENSLAND** [AU/AU]; Raymond Terrace, South Brisbane, Queensland 4101 (AU).

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): **HART, Derek, Nigel, John** [NZ/AU]; -, 3 Borva Street, Dutton Park, Queensland 4102 (AU). **TURTLE, Cameron, John** [AU/AU]; 30/120 Sydney Street, New Farm, Queensland 4005 (AU).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: *IN VITRO* IMMUNIZATION

(57) Abstract: The present invention relates generally to a method of generating lymphocytes specific for particular antigens. More particularly, the present invention provides a method for generating antigen-reactive T-cells and even more particularly cytotoxic (CD8+) T-cells *in vitro* specific for antigens such as peptide antigens. The method of the present invention enables *in vitro* T-cell priming for particular antigens such as antigens on cancer cells, pathogenic cells, viruses or cells infected with viruses. The present invention is useful in identifying particularly immunogenic antigens for immunotherapy. The present invention further provides a method for the treatment or prophylaxis of a disease or condition in a subject by generating T-cells reactive to an antigenic molecule and administering an effective amount of antigen-reactive T-cells to the subject or other compatible host. The present invention permits the generation of dendritic cell/T-cell populations for use in cellular immunotherapy.